

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-23. (cancelled)

24. (new) An apparatus for determining a spatial alignment of a semi-trailer or trailer which is connected to a prime mover, the apparatus comprising:

sensors which are arranged on the prime mover in order to produce sensor signals which describe the spatial alignment of the semi-trailer or trailer relative to the prime mover, wherein the sensors detect contours of the semi-trailer or trailer; and

an evaluation unit which uses the sensor signals to determine at least one angle variable which describes an angle between the prime mover and the semi-trailer or trailer, wherein the sensor signals include image information from at least one of a two-dimensional representation and an image of a linear sub-area of the detected contours of the semi-trailer or trailer, and wherein the evaluation unit determines the at least one angle variable on the basis of the image information by evaluating the rate of change of geometric characteristics of the at least one of the two-dimensional representation and the image.

25. (new) The apparatus as claimed in claim 24, wherein the at least one angle variable includes at least one of a first angle variable and a second

angle variable, wherein the first angle variable describes an angle (α) between an axis which is oriented in the longitudinal direction of the prime mover and an axis which is oriented in the longitudinal direction of the semi-trailer or trailer, and wherein the second angle variable describes an angle (β) between an axis which is oriented in the vertical direction of the prime mover and an axis which is oriented in the vertical direction of the semi-trailer or trailer.

26. (new) The apparatus as claimed in claim 25, wherein the evaluation unit determines at least one of a first angle rate variable and a second angle rate variable, wherein the first angle rate variable represents the rate of change of the first angle variable, and wherein the second angle rate variable represents the rate of change of the second angle variable.

27. (new) The apparatus as claimed in claim 26, wherein the evaluation unit uses at least one of the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a mass variable which describes a current mass of the semi-trailer or trailer.

28. (new) The apparatus as claimed in claim 26, wherein the evaluation unit uses the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a mass distribution variable, which describes a mass distribution along an axis which is oriented in the longitudinal direction of the semi-trailer or trailer.

29. (new) The apparatus as claimed in claim 26, wherein the evaluation unit uses the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a center of gravity height variable, which describes a height of the center of gravity of the semi-trailer or trailer.

30. (new) The apparatus as claimed in claim 25, wherein the evaluation unit uses at least one of the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a mass variable which describes a current mass of the semi-trailer or trailer.

31. (new) The apparatus as claimed in claim 25, wherein the evaluation unit uses the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a mass distribution variable, which describes a mass distribution along an axis which is oriented in the longitudinal direction of the semi-trailer or trailer.

32. (new) The apparatus as claimed in claim 25, wherein the evaluation unit uses the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable, to determine a center of gravity height variable, which describes a height of the center of gravity of the semi-trailer or trailer.

33. (new) The apparatus as claimed in claim 28, wherein the evaluation unit determines a threshold value for at least one of the first angle variable and the first angle rate variable as a function of the mass variable and of the mass distribution variable, wherein the evaluation unit controls at least one of a drive, a brake and a steering device of the prime mover and a brake of the semi-trailer or trailer, in order to prevent the magnitude of at least one of the first angle variable and the first angle rate variable from exceeding a respective threshold value.

34. (new) The apparatus as claimed in claim 33, wherein the evaluation unit produces a driver warning if at least one of the difference between the magnitude of the first angle variable and its threshold value and the difference between the magnitude of the first angle rate variable and its threshold value is less than a respective predetermined limit value.

35. (new) The apparatus as claimed in claim 27, wherein the evaluation unit determines a threshold value for at least one of the first angle variable and the first angle rate variable as a function of the mass variable and of the mass distribution variable, wherein the evaluation unit controls at least one of a drive, a brake and a steering device of the prime mover and a brake of the semi-trailer or trailer, in order to prevent the magnitude of at least one of the first angle variable and the first angle rate variable from exceeding a respective threshold value.

36. (new) The apparatus as claimed in claim 33, wherein the evaluation unit produces a driver warning if at least one of the difference between the magnitude of the first angle variable and its threshold value and the difference between the magnitude of the first angle rate variable and its threshold value is less than a respective predetermined limit value.

37. (new) The apparatus as claimed in claim 33, wherein the evaluation unit determines at least one of the threshold value for the first angle variable and the threshold value for the first angle rate variable taking into account the instantaneous driving state of the prime mover.

38. (new) The apparatus as claimed in claim 27, wherein the evaluation unit determines a threshold value for at least one of the second angle variable and the second angle rate variable as a function of the mass variable and the center of gravity height variable, wherein the evaluation unit controls at least one of a drive, a brake and a steering device of the prime mover and a brake of the semi-trailer or trailer, in order to prevent at least one of the magnitude of the second angle variable and the magnitude of the second angle rate variable from exceeding a respective threshold value.

39. (new) The apparatus as claimed in claim 38, wherein the evaluation unit produces a driver warning if at least one of the difference between the magnitude of the second angle variable and its threshold value and

the difference between the magnitude of the second angle rate variable and its threshold value is less than a respective predetermined limit value.

40. (new) The apparatus as claimed in claim 38, wherein the evaluation unit determines at least one of the threshold value for the second angle variable and the threshold value for the second angle rate variable taking into account the instantaneous driving state of the prime mover.

41. (new) The apparatus as claimed in claim 27, wherein the evaluation unit determines at least one of a nominal value for the first angle variable and a nominal value for the first angle rate variable as a function of the mass variable and the mass distribution variable, and wherein the evaluation unit controls at least one of a drive, a brake and a steering device of the prime mover and a brake of the semi-trailer or trailer, in order to allow at least one of the first angle variable and the first angle rate variable to assume the respective nominal value.

42. (new) The apparatus as claimed in claim 41, wherein the evaluation unit determines at least one of the nominal value for the first angle variable and the nominal value for the first angle rate variable taking into account the instantaneous driving state of the prime mover.

43. (new) The apparatus as claimed in claim 41, further comprising a sensor for detecting a roadway profile, wherein the evaluation unit takes into account the roadway profile in the determination of the at least one of the

nominal value of the first angle value and the nominal value of the nominal value of the first angle rate variable.

44. (new) The apparatus as claimed in claim 27, wherein the evaluation unit determines at least one of a nominal value for the second angle variable and a nominal value for the second angle rate variable as a function of the mass variable and the center of gravity height variable, and wherein the evaluation unit controls at least one of a drive, a brake and a steering device of the prime mover and a brake of the semi-trailer or trailer, in order to allow at least one of the second angle variable and the second angle rate variable to assume the respective nominal value.

45. (new) The apparatus as claimed in claim 44, wherein the evaluation unit determines at least one of the nominal value for the second angle variable and the nominal value for the second angle rate variable taking into account the instantaneous driving state of the prime mover.

46. (new) The apparatus as claimed in claim 44, further comprising a sensor for detecting a roadway profile, wherein the evaluation unit takes into account the roadway profile in the determination of the at least one of the nominal value of the second angle value and the nominal value of the nominal value of the second angle rate variable.

47. (new) The apparatus as claimed in claim 25, further comprising sensors for detecting at least one of the spatial alignment and the dynamic

response of the prime mover relative to roadway contours, wherein the evaluation unit uses the at least one of the spatial alignment and the dynamic response of the prime mover relative to contours of roadway to determine at least one of the spatial alignment and the dynamic response of at least one of a combination of the prime mover and the semi-trailer or trailer and of the semi-trailer or trailer relative to the roadway contours by taking into account at least one of the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable.

48. (new) The apparatus as claimed in claim 24, wherein the sensors comprise an arrangement of imaging sensors, which are designed to detect electromagnetic waves in a visible or invisible optical wavelength range or in a radar wavelength range.

49. (new) The apparatus as claimed in claim 24, wherein the sensors are part of a blind-angle monitoring device or of a rear-area monitoring device.

50. (new) The apparatus as claimed in claim 25, wherein at least one of the first angle variable, the second angle variable, the first angle rate variable and the second angle rate variable is used to provide at least one of a parking aid and a reversing aid.

51. A method for determining a spatial alignment of a semi-trailer or trailer which is connected to a prime mover, the method comprising:

detecting contours of the semi-trailer or trailer in order to produce sensor signals which describe a spatial alignment of the semi-trailer or trailer relative to the prime mover;

using the sensor signals to determine at least one angle variable which describes an angle between the prime mover and the semi-trailer or trailer, wherein the sensor signals include image information from at least one of a two-dimensional representation and an image of a linear sub-area of the detected contours of the semi-trailer or trailer; and

determining the at least one angle variable on the basis of the image information by evaluating the rate of change of geometric characteristics of the at least one of the two-dimensional representation and the image of the linear sub-area of the detected contours of the semi-trailer or trailer.